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|   |                      |                         |
|---|----------------------|-------------------------|
| <b>TRANSMITTAL FORM</b><br>(to be used for all correspondence after initial filing) | Application Number   | 10/553,489              |
|   | Filing Date          | October 17, 2005        |
|   | First Named Inventor | Yusaku SHIMAOKA, et al. |
|   | Art Unit             | 2875                    |
|   | Examiner Name        | To Be Assigned          |
| Total Number of Pages in This Submission <i>12</i>                                  | Attorney Docket No.  | MTS-3532US              |

| ENCLOSURES (Check all that apply)  |  |   |
|--|--|---|
| <input type="checkbox"/> Fee Transmittal Form<br><input type="checkbox"/> Fee Attached   | <input type="checkbox"/> Drawing(s)  | <input type="checkbox"/> After Allowance Communication to TC                            |
| <input type="checkbox"/> Amendment/Reply<br><input type="checkbox"/> After Final<br><input type="checkbox"/> Affidavits/Declaration(s)                     | <input type="checkbox"/> Licensing-related Papers  | <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences     |
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|  | <input type="checkbox"/> CD, Number of CD(s) _____<br><input type="checkbox"/> Landscape Table on CD | <input type="checkbox"/> Request for Corrected Filing Receipt                           |
|  |  | <input type="checkbox"/> Copy of Preliminary Amendment filed 10/17/2005                 |
|  |  | <input type="checkbox"/> Marked-up copy of Filing Receipt                               |
| Remarks:   |  |   |

| SIGNATURE OF APPLICANT, ATTORNEY OR AGENT |                         |          |        |
|---|-------------------------|----------|--------|
| Firm Name                                 | RatnerPrestia           |          |        |
| Signature                                 | <i>Daniel N. Calder</i> |          |        |
| Printed Name                              | Daniel N. Calder        |          |        |
| Date                                      | June 21, 2006           | Reg. No. | 27,424 |

| CERTIFICATE OF TRANSMISSION/MAILING   |                      |      |               |
|---|----------------------|------|---------------|
| I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below: |                      |      |               |
| Signature   | <i>Fran Petrillo</i> |      |               |
| Typed or Printed Name   | Fran Petrillo        | Date | June 21, 2006 |

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Office, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, ALEXANDRIA, VA 22313-1450.**

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## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Yusaku SHIMAOKA, et al.

Serial No.: 10/553,489

Group No.: 2875

Filed: October 17, 2005

Examiner: To Be Assigned

For: LIGHT SOURCE APPARATUS,  
LIGHTING APPARATUS AND  
PROJECTION DISPLAY  
APPARATUS (AS AMENDED)

**Filing Receipt Corrections**  
**Office of Initial Patent Examination**  
**Commissioner for Patents**  
**P.O. Box 1450**  
**Alexandria, VA 22313-1450**

**REQUEST FOR CORRECTED FILING RECEIPT**

1. Attached is a copy of the official filing receipt received from the PTO in the above application for which issuance of a corrected filing receipt is respectfully requested.

2. There is an error with respect to the following data:

- ☒ Incorrectly entered  
and/or  
☐ omitted

- Error in*
1. ☐ Applicant's name
  2. ☐ Applicants' address
  3. ☒ Title
  4. ☐ Filing Date
  5. ☐ Serial Number
  6. ☐ Foreign/PCT Application  
Reference
  7. ☐ Other:

- Correct data*
- 1.
  - 2.
  3. LIGHT SOURCE APPARATUS, LIGHTING  
APPARATUS AND PROJECTION DISPLAY  
APPARATUS (copy of Preliminary  
Amendment filed October 17, 2005)
  - 4.
  - 5.
  - 6.
  - 7.

3. No fee is due.

Respectfully submitted,

RatnerPrestia  
P. O. Box 980  
Valley Forge, PA 19482-0980  
(610) 407-0700

*Daniel N. Calder*  
\_\_\_\_\_  
Daniel N. Calder, Reg. 27,424

**CERTIFICATE OF MAILING (37 CFR 1.8a)**

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to the: Filing Receipt Corrections, Office of Initial Patent Examination, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Date: **June 21, 2006**

*Fran Petrillo*  
\_\_\_\_\_  
Fran Petrillo



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
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| APPL NO.   | FILING OR 371<br>(c) DATE | ART UNIT | FIL FEE REC'D | ATTY. DOCKET NO | DRAWINGS | TOT CLMS | IND CLMS |
|------------|---------------------------|----------|---------------|-----------------|----------|----------|----------|
| 10/553,489 | 10/17/2005                | 2875     | 1860          | MTS-3532US      | 19       | 18       | 2        |

52473  
RATNERPRESTIA  
P.O. BOX 980  
VALLEY FORGE, PA 19482

**RATNERPRESTIA**

**JUN 19 2006**

**CONFIRMATION NO. 1296**

**FILING RECEIPT**



\*OC000000019165287\*

Date Mailed: 06/12/2006

Receipt is acknowledged of this regular Patent Application. It will be considered in its order and you will be notified as to the results of the examination. Be sure to provide the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION when inquiring about this application. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please mail to the Commissioner for Patents P.O. Box 1450 Alexandria Va 22313-1450. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections (if appropriate).**

**Applicant(s)**

Yusaku Shimaoka, Osaka, JAPAN;  
Shu Namba, Osaka, JAPAN;  
Kazunori Tanabe, Okayama, JAPAN;

**Power of Attorney:** The patent practitioners associated with Customer Number 52473.

**Domestic Priority data as claimed by applicant**

This application is a 371 of PCT/JP04/05422 04/15/2004

**Foreign Applications**

JAPAN 2003-114162 04/18/2003

If Required, Foreign Filing License Granted: 06/07/2006

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US10/553,489**

Projected Publication Date: 09/14/2006

Non-Publication Request: No

Early Publication Request: No

Title

**COPY**

*Light Source Apparatus, Lighting Apparatus and Projection Display Apparatus*  
 Light source unit, illuminator and projection display

**Preliminary Class**

362

**PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES**

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at <http://www.uspto.gov/web/offices/pac/doc/general/index.html>.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, <http://www.stopfakes.gov>. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4158).

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 Title 37, Code of Federal Regulations, 5.11 & 5.15**

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**COPY**

Application No.: To Be Assigned

MTS-3532US



**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Appln. No: To Be Assigned  
Applicants: Yusaku SHIMAOKA, et al.  
Filed: Herewith  
Title: LIGHT SOURCE APPARATUS, LIGHTING APPARATUS AND  
PROJECTION DISPLAY APPARATUS (AS AMENDED)  
TC/A.U.: To Be Assigned  
Examiner: To Be Assigned  
Confirmation No.: To Be Assigned  
Docket No.: MTS-3532US

**PRELIMINARY AMENDMENT**

***Mail Stop PCT***

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Prior to examination, please amend the above-identified application as follows:

- ☒ **Amendments to the Title** begin on page **2** of this paper.
- ☒ **Amendments to the Specification** begin on page **3** of this paper.
- ☒ **Amendments to the Claims** are reflected in the listing of claims which begins on page \_\_\_\_\_ of this paper.
- ☐ **Amendments to the Drawings** begin on page \_\_\_\_\_ of this paper and include an attached replacement sheet(s).
- ☒ **Amendments to the Abstract** are on page **5** of this paper. A clean version of the Abstract is on page **7** of this paper.
- ☐ **Remarks/Arguments** begin on page \_\_\_\_\_ of this paper.
- ☒ **Please enter the enclosed Article 34 Amendment.**

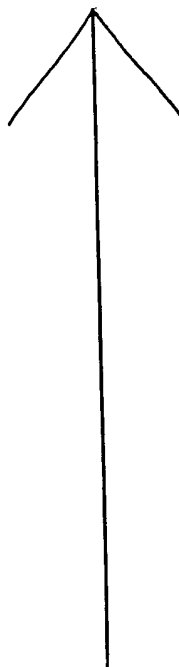


**COPY**

**Amendment to the Title:**

Please replace the Title with the following:

LIGHT SOURCE APPARATUS, LIGHTING APPARATUS AND PROJECTION DISPLAY  
APPARATUS



**COPY**

**Amendments to the Specification:**

After the title and before the first paragraph, please insert the following paragraph:

THIS APPLICATION IS A U.S. NATIONAL PHASE APPLICATION OF PCT INTERNATIONAL APPLICATION PCT/JP2004/005422.

Please replace the paragraph, beginning at page 5, line 8, with the following rewritten paragraph:

As shown in Figure 11, the conventional multi-lamp optical system has the configuration in which the light radiated from multiple light source apparatuses gets incident on the rod integrator 2 which is homogeneous lighting means. However, a transmissive/reflective liquid crystal of displaying the image and the light modulation device called a DMD (Digital Micro-mirror Device) have a luminous flux incident angle range capable of substantially modulating the light and an image display effective area capable of displaying the image. For this reason, due to the relation of ~~Heltzhelm~~Helmholtz - Lagrange which is a basic formula of imaging optics, an output angle range of the light according to the size of an outgoing side opening 2b of the rod integrator 2 in an imaging relation with the relay lens 3 is uniquely decided by the relay lens 3.

Please replace the paragraph, beginning at page 5, line 24, with the following rewritten paragraph:

In this case, if the outgoing side opening and the incident side opening of the rod integrator 2 are of an equal size, the output angle range is equal to the incident angle range. If the outgoing side opening and the incident side opening are of different sizes, the incident angle range is in accordance with the size of the incident side opening induced by the relation of ~~Heltzhelm~~Helmholtz - Lagrange, and so only the luminous flux within this angle range is projected onto the screen via the rod integrator 2, relay lens 3, light modulation device 4 and projection lens.

Please replace the paragraph, beginning at page 7, line 6, with the following rewritten paragraph:

**COPY**



The light source apparatus of the second conventional example shown in Figure 15 is in a form of non-rotation asymmetry to the optical axis of the first concave mirror, that is, the straight line connecting the luminescence center 10c of the light-emitting portion 10 of the lamp to the focus Y. Its outer shape can be smaller than that of the first conventional example. The luminous fluxes formed by collection of light can also be of non-rotation asymmetry, and it is possible, even in the multi-lamp optical system of Figure 11, to reduce the distance between the first concave mirror 8 corresponding to the first concave mirror 6 and the incident side opening 2a of the rod integrator 2.

Please replace the paragraph, beginning at page 46, line 9, with the following rewritten paragraph:

As previously described, in the above embodiments, the lamp 11 is an example of the lamp or light generating means of the present invention, the spherical vessel portion of the lamp light-emitting portion 111 except the source of luminescence is an example of the spherical vessel portion of the present invention, the ends ~~111b~~-111c and 111d are an example of the pair of ends of the present invention, the light transmission plane 111a of the lamp light-emitting portion 111 is an example of a first opposed plane of the present invention, and the light transmission plane 111b is an example of a second opposed plane of the present invention.

Please delete the following title, beginning at page 47, line 11:

~~Industrial Applicability~~

**COPY**

**Amendment to the Abstract:**

The Abstract has been amended. A revised Abstract is attached.

**ABSTRACT**

~~To provide a light source apparatus capable of striking a balance between miniaturization and high optical usable efficiency for concave mirrors as light generating means and light collecting means and further capable of emitting luminous fluxes in asymmetry to the light generating means and optical axes of the concave mirrors with high efficiency.~~

The ~~A~~ light source apparatus ~~consisting of~~ includes a lamp ~~11~~, an ellipsoidal mirror ~~12~~ ~~of~~ collecting a part of light radiated from a light transmission plane ~~111b~~ of the lamp ~~11~~, and a spherical mirror ~~13~~ ~~of~~ collecting another part of the light radiated from a light transmission plane ~~111a~~ not collected by the ellipsoidal mirror ~~12~~ and reflecting it on the ellipsoidal mirror ~~12~~, in which a reflection plane of the ellipsoidal mirror ~~12~~ and the reflection plane of the spherical mirror ~~13~~ are in a form of non-rotation symmetry to an optical axis ~~14~~ connecting a focal position F1 corresponding to a source of luminescence of the lamp ~~11~~ to a focal position F2 of the light collected by the ellipsoidal mirror ~~12~~ respectively, ~~a~~. The distance between the reflection plane of the spherical mirror ~~13~~ and the source of luminescence of the lamp ~~11~~ is shorter than the distance between the source of luminescence and the focus of the light collected by the ellipsoidal mirror ~~12~~, and a part of the reflection plane of the ellipsoidal mirror ~~12~~ is formed around the optical axis ~~14~~.

Respectfully submitted,



Daniel N. Calder, Reg. No. 27,424  
Attorney for Applicants

DNC/fp

Attachment: Abstract

Dated: October 17, 2005

**COPY**

Application No.: To Be Assigned

MTS-3532US

P.O. Box 980  
Valley Forge, PA 19482-0980  
(610) 407-0700

The Commissioner for Patents is hereby authorized to charge payment to Deposit Account No. **18-0350** of any fees associated with this communication.

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**Date of Deposit: October 17, 2005**

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KATHLEEN LIBBY

**COPY**

ABSTRACT

A light source apparatus includes a lamp, an ellipsoidal mirror collecting a part of light radiated from a light transmission plane of the lamp, and a spherical mirror collecting another part of the light radiated from a light transmission plane not collected by the ellipsoidal mirror and reflecting it on the ellipsoidal mirror, in which a reflection plane of the ellipsoidal mirror and the reflection plane of the spherical mirror are in a form of non-rotation symmetry to an optical axis connecting a focal position F1 corresponding to a source of luminescence of the lamp to a focal position F2 of the light collected by the ellipsoidal mirror respectively. The distance between the reflection plane of the spherical mirror and the source of luminescence of the lamp is shorter than the distance between the source of luminescence and the focus of the light collected by the ellipsoidal mirror, and a part of the reflection plane of the ellipsoidal mirror is formed around the optical axis.

**COPY**